PS2102
PS2122

Transportable Systems

User's Manual

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PS 2102
PS 2122

Transportable Systems

User's Manual

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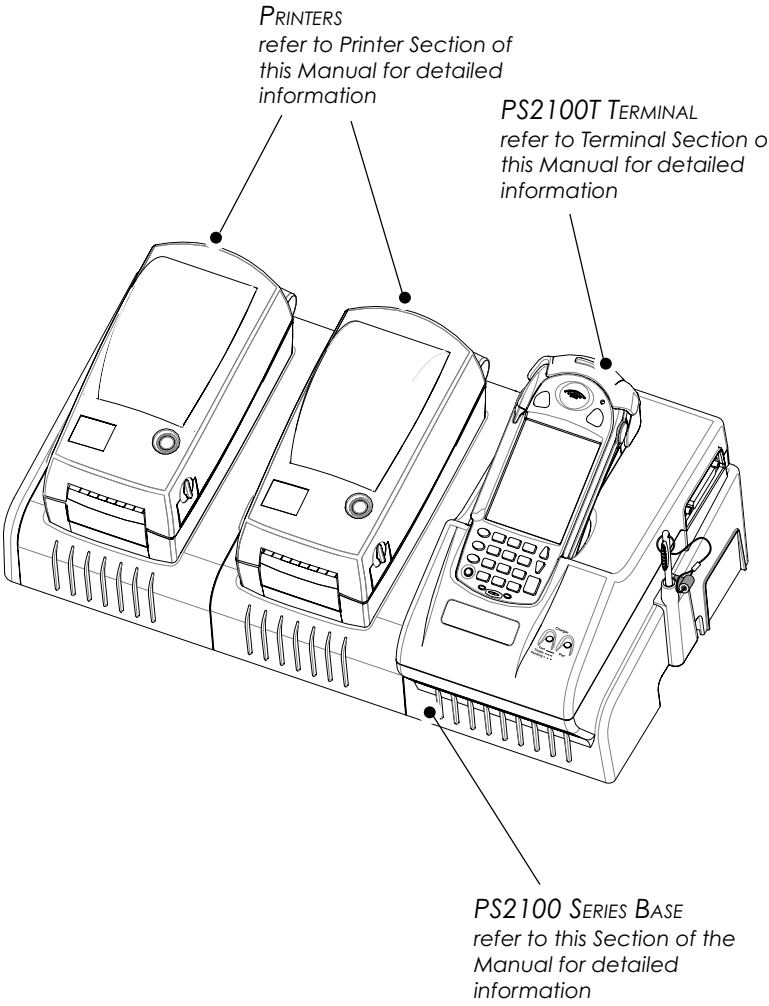

PRINTERS
refer to Printer Section of this Manual for detailed information
PS2100T TERMINAL
refer to Terminal Section of this Manual for detailed information
PS2100 SERIES BASE
refer to this Section of the Manual for detailed information

PS2100 SERIES TRANSPORTABLE SYSTEM
(PS2122 shown)

The PS2100 Series of transportable printing systems, consist of a terminal and configurable combinations of printer modules integrated into a base which provides power, charging and interface capabilities.

Terminal

The terminal section of the PS2100 Series is a PS2100T terminal/scanner with a touch-screen display and a alpha numeric keypad for data entry. It utilizes the Microsoft Windows® CE operating system.

The terminal of the PS2100 Series is a **docking terminal**, which can be removed from the PS2100 Series Transportable System and used independently as a hand-held terminal/scanner.

Complete information regarding the features and use of the terminal can be found in the Terminal Section of this manual.

Printer

There are two printers which can be specified in a PS2100 Series system: a unit which prints on 2" wide media, and a larger one using 4" media. Both printers use direct thermal media and are specifically designed for printing labels, tags or continuous receipts (with or without bar codes) from the PS2100T terminal.

Following is a table describing the printer configurations available on PS2100 series printing systems.

Model	Printers
PS2102	1
PS2122	2

Complete information regarding the features and use of the printer module can be found in the Printer section of this manual.

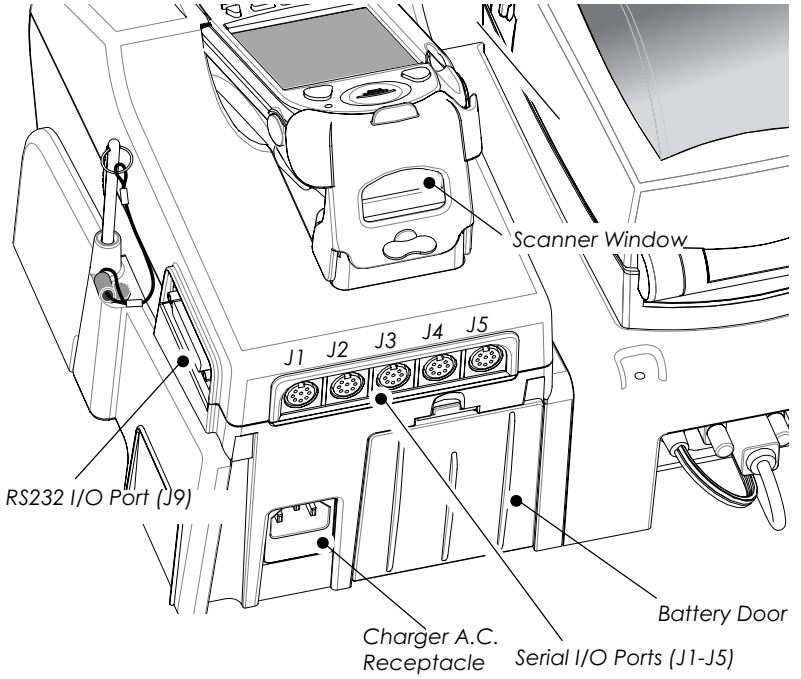
Base

The Base of the PS2100 Series Transportable System acts as the infrastructure linking the terminal and the printer(s). It provides power to run all modules for a full

work shift by means of a removable battery pack. The built in intelligent charger provides rapid charging for the main battery and also allows the PS2100 Series to run when plugged into an AC outlet.

Six external serial ports are provided on the PS2100 Series Base. One is a 25 pin RS232 interface to allow serial communications to P.C.s or in-store processors. The remaining five ports are multiplexed to allow the simultaneous input of up to five bar code scanners.

The PS2100 Series can also provide communication to the host facility's data network through the optional wireless capabilities of the terminal.

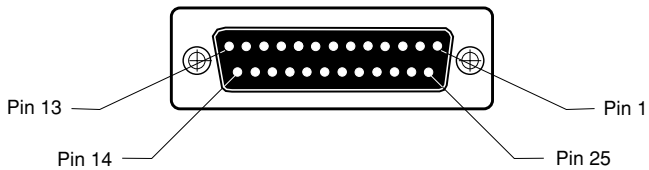


System I/O Connections

RS232C Connector (J9)

The following are the pin assignments for the 25-pin D-Sub RS232C serial connector.

Pin Number	Signal Name	Signal Type	Description
1	n/c	Not connected	
2	SYS_RXD	input	Receive Data
3	SYS_TXD	output	Transmit data
4	SYS_CTS	input	Clear to Send
5	SYS_RTS	output	Request to send
6	SYS_DTR	output	Data Terminal Ready
7	GND		Signal ground
8	COM2_DCD	input	Carrier Detect
9	VOUT	output	+5VDC, 500 mA max.
10-19	n/c	Not connected	
20	SYS_DSR	input	Data Set Ready
21-25	n/c	Not connected	

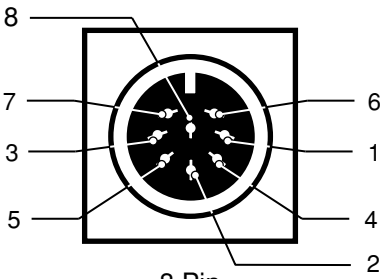


DB-25 Pin Female Plug (J9)

Serial 8 Pin Din Connectors (J1-J5)

The following are the pin assignments for the 8-pin DIN serial connectors

Pin Number	Signal Name	Signal Type	Description
1	RXD IN	input	Receive Data
2	TXD IN	output	Transmit data
3	CTS IN	input	Clear to Send
4	RTS OUT	output	Request to send
5	GND		Signal ground
6	n/c	Not connected	
7	n/c	Not connected	
8	+5VDC	output	+5VDC, 250 mA max.



8 Pin
Serial Port
J1-J5

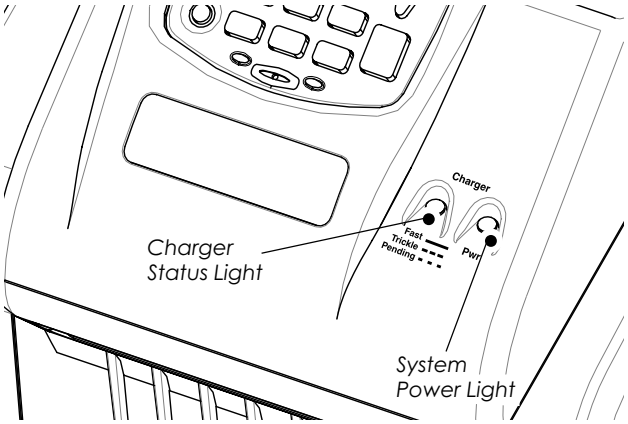
System Battery & Charging

The PS2100 Series is powered by one Nickel-Metal Hydride (NiMH) battery pack. The battery pack has sufficient energy for six hours of normal use before it requires recharging or replacing with a freshly charged battery.

Charging

The built in charger in the PS2100 Series can recharge a depleted battery in three to four hours. This time will vary if the system is used during the charge cycle.

Batteries are charged by plugging the PS2100 Series into a 90 to 230 V.A.C. outlet. The charger will automatically adjust for the line voltage and start charging the



PS2100 Series Charger Indicators

battery. The charger power light will come on to indicate the unit is running on A.C. power, and the charge status light will also turn on. When the battery reaches its maximum charge, the charge status light will start to blink, indicating that the battery is fully charged.

A slowly blinking status light indicates the charger is in "Pending" mode, which occurs when a battery has been discharged too deeply to go through the normal charge

cycle (e.g. a battery that has been stored too long and allowed to discharge). When in the “Pending” mode the PS2100 Series charger will slowly bring this battery’s charge state up to a level where it can safely withstand a fast charge, and then charge it normally. When the charger is in the “Pending” mode, run and charge operations are not available.

Run and Charge Mode

The PS2100 Series system can be used normally while its battery is being charged. The charger indicator lights will operate as usual, however, charge time will be longer.

Under severe system usage, the charge status indicator may turn on steadily, as the charger switches to its “Fast Charge” mode. This is a normal occurrence, and once the battery’s charge level has been restored, the charge status indicator will return to its blinking state.

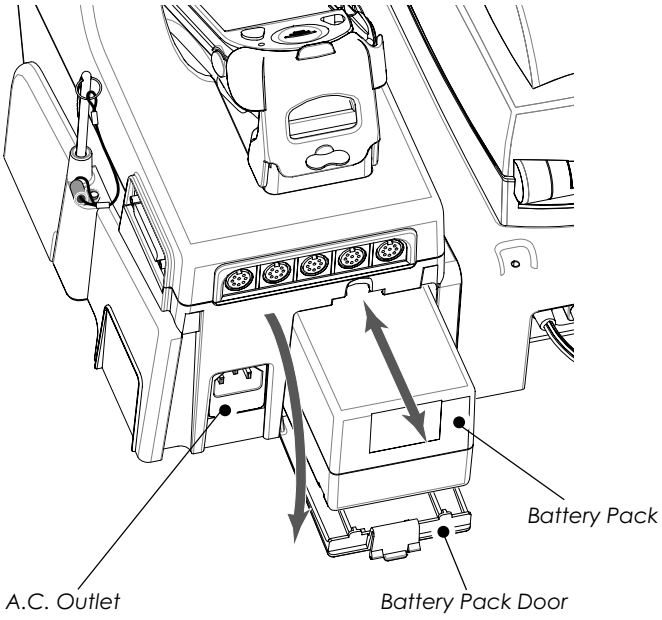
If the charger is in the “Pending” mode, the Run and Charge mode is disabled.

Changing Batteries

Always turn the terminal off before changing batteries!

The terminal is powered by its own battery when main power to the system is turned off and will retain its data when the main battery is removed. Insure that you have a fully charged replacement battery on hand, and install the new battery as quickly as possible.

- Open the battery door and let it drop away from the unit.
- Remove the battery by lifting up on the bottom of the battery pack and pulling it out from the back of the system.
- Slide the replacement battery into the back of the system until it clicks into place. Insure that the battery terminals face into the system.
- Close the battery door and insure that it snaps back into place.



REPLACING BATTERIES IN THE PS2100 SERIES

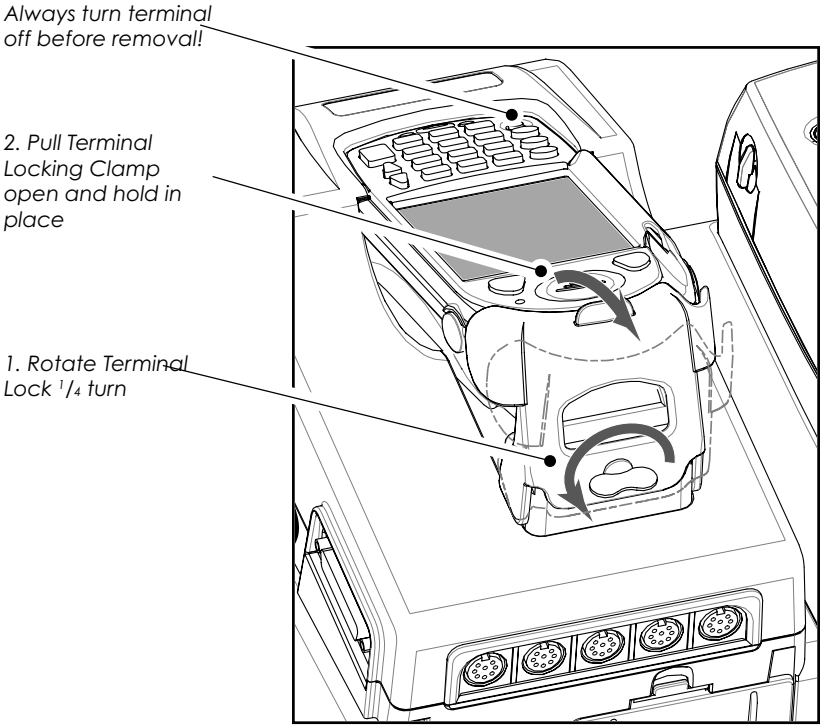
Removing or Replacing the Terminal

Always turn the PS2100 Series system off before removing the terminal.

Removing the Terminal

The PS2100 Series System's terminal section is removable to allow its use as a hand held data collection device. The terminal can be removed by following these steps:

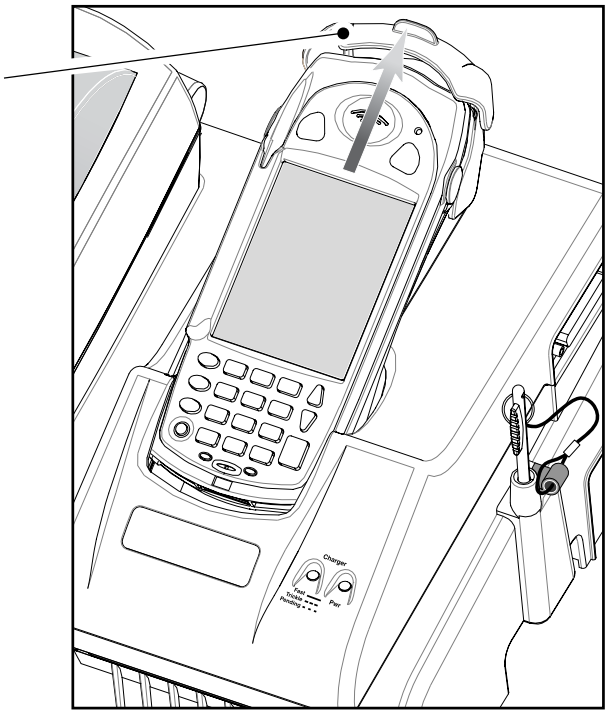
- Turn the PS2100 Series system off by pressing the terminal's "ON/OFF" key.
- Turn the terminal locking key at the back of the unit a quarter turn until it is loose.
- Rotate the Terminal locking clamp away from the terminal.


Always turn terminal off before removal!
2. Pull Terminal Locking Clamp open and hold in place
1. Rotate Terminal Lock 1/4 turn

REMOVING THE TERMINAL: STEP 1

- While still holding the clamp open, gently pull the terminal straight out of the dock.

Pull and hold Terminal Locking clamp back and slide terminal out of the dock.

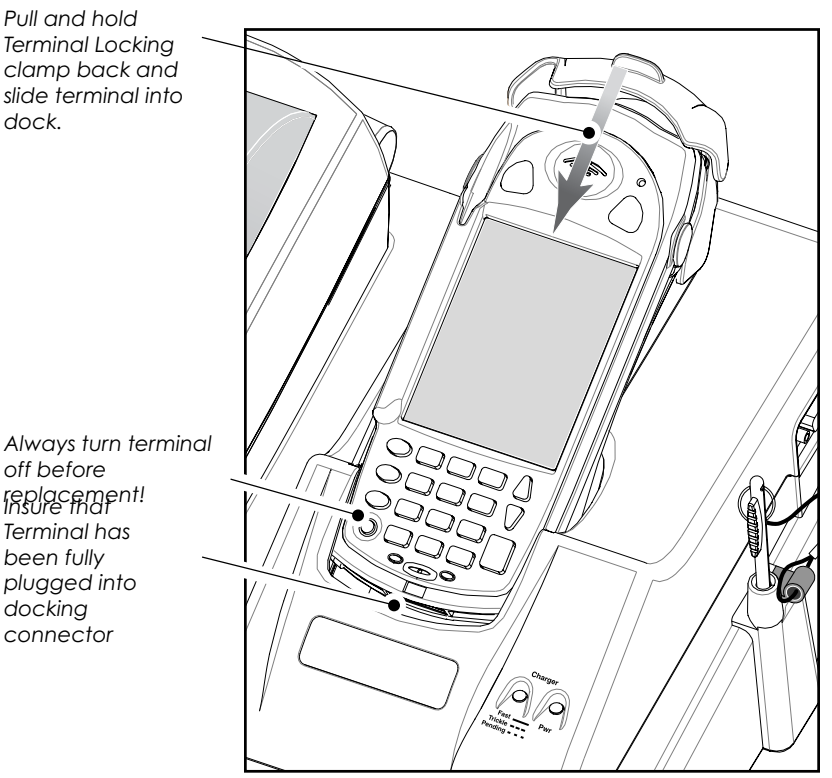


The terminal now can be turned on and used as a hand held device. Refer to the Terminal Section of this manual for more details on using the terminal, and information on charging and replacing the terminal battery pack.

continued on next page

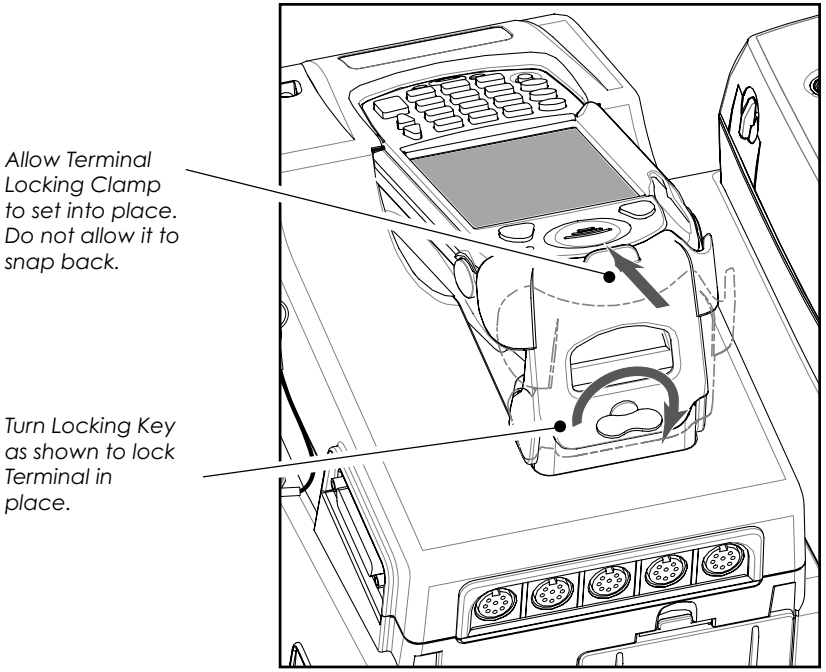
Replacing the Terminal

The terminal is replaced into the PS2100 System by following these steps:


Pull and hold Terminal Locking clamp back and slide terminal into dock.
Always turn terminal off before replacement!
Insure that Terminal has been fully plugged into docking connector
Charger
Fast
Trickle
Pending
Pwr

REPLACING THE TERMINAL: STEP 1

- Turn the terminal off by pressing its “ON/OFF” key.
- Rotate and hold the terminal locking clamp on the PS2100 System towards the back of the system to allow access to the dock.
- While still holding the clamp in position, gently slide the terminal into the dock.
- Insure that the terminal has been fully plugged into the docking connector


Allow Terminal Locking Clamp to set into place. Do not allow it to snap back.
Turn Locking Key as shown to lock Terminal in place.

REPLACING THE TERMINAL: STEP 2

- Allow the terminal clamp to slowly return to position to secure the terminal. Don't let it snap back into place.
- Turn the terminal locking key at the back of the unit a quarter turn until it is tight. This retains the terminal in place so it will not accidently be bumped loose from its connection to the main PS2100 system.

⚠ ***The terminal should always be locked in place prior to its use in the PS2100 Series system.***

System Specifications

Size/Weight

Model	width	depth	height	weight
PS2102	13.5"	11"	8.5"	12 lb.
	343 mm	279mm	216 mm	5.44 Kg
PS2122	19.5"	11"	8.5"	16#
	494 mm	279mm	216 mm	7.26 Kg

Weights are with battery, less printing media)

Power

- 7.2VDC, 7000 mAHr Nickel Metal Hydride (NiMH) Battery Pack
- Built in intelligent battery charger, 110-230 V.A.C. input.

Interfaces

- One (1) DB25F Connector RS-232 port for one-way or two-way communications up to 38.4K BPS. (J9)
- Five (5) multiplexed 8 pin circular DIN Connectors, for one-way or two-way communications. (J1-5)

Communications Protocol

Supports RTS/CTS (hardware) and XON/XOFF handshaking protocols to synchronize with the host terminal. The handshaking protocol and the baud rate is programmable. The default communications parameters are:

Handshaking = RTS/CTS
Baud Rate = 19,200
Parity = None
Data Bits = 8

Terminal Section:

Windows CE based docking (removable) terminal.

- LCD Display/ Touch Screen
- 19 Key Keypad
- Optional built-in Laser Scanner
- Optional RF LAN module

See the Terminal Section of this manual for complete terminal specifications

Printer Section

Configurable with one or two printers, depending on model:

- 2” wide media, 200 d.p.i
- 5” diameter media roll capacity (approx. 450’ [137 m] @.0035” thick stock)
- Self-centering stock adjustment with position locking capability.
- Optional label dispenser with label taken detection circuitry

System Environmental Characteristics

- Operating temperature: 4˚ to 110˚F (-16˚ to 43˚C)
- Storage temperature: -4˚ to 122˚F (-20˚ to 50˚C)
- Relative humidity: 45%-95% non-condensing @ 77°F (25°C)
- Water Resistance: NEMA2
- Drop Test: One (1) 3’ (.9 m) drop to concrete on each side, per UL 1950 sec. 4.2.5.

Terminal Section

PS2100T Introduction

The PS2100T is a highly integrated, light weight scanner/terminal. Its compact one-piece design minimizes operator fatigue and promotes more efficient and accurate operation. The PS2100T's innovative design also provides for "either hand" scanning to promote operator comfort.

The PS2100T utilizes the Microsoft Windows® CE operating system and a touch-screen display. Operators already familiar with Windows will quickly become productive with the PS2100T due to its familiar user interface.

The PS2100T's powerful CPU, combined with sophisticated RF communications, an IR communications port and an accurate and reliable laser scanner combine to make the PS2100T a highly versatile terminal that can be easily integrated into virtually any data processing network.

The PS2100T serves as a fully integrated component of the PS2100 Series printing systems. The various models of the PS2100 Series are complete mobile printing package consisting of the PS2100T terminal, a configurable combination of 2" and 4" thermal printers, inputs for multiple scanners, connections to facility-wide data networks, and a high capacity battery and charger.

The PS2100T as used in a PS2100 Series Printing System is a **docking terminal**. It can be removed from a PS2100 Series System and used as an independent hand held terminal.

Some PS2100T features described in this manual may work differently when the unit is docked in a PS2100 Printing System. This section will cover these exceptions when they arise.

continued

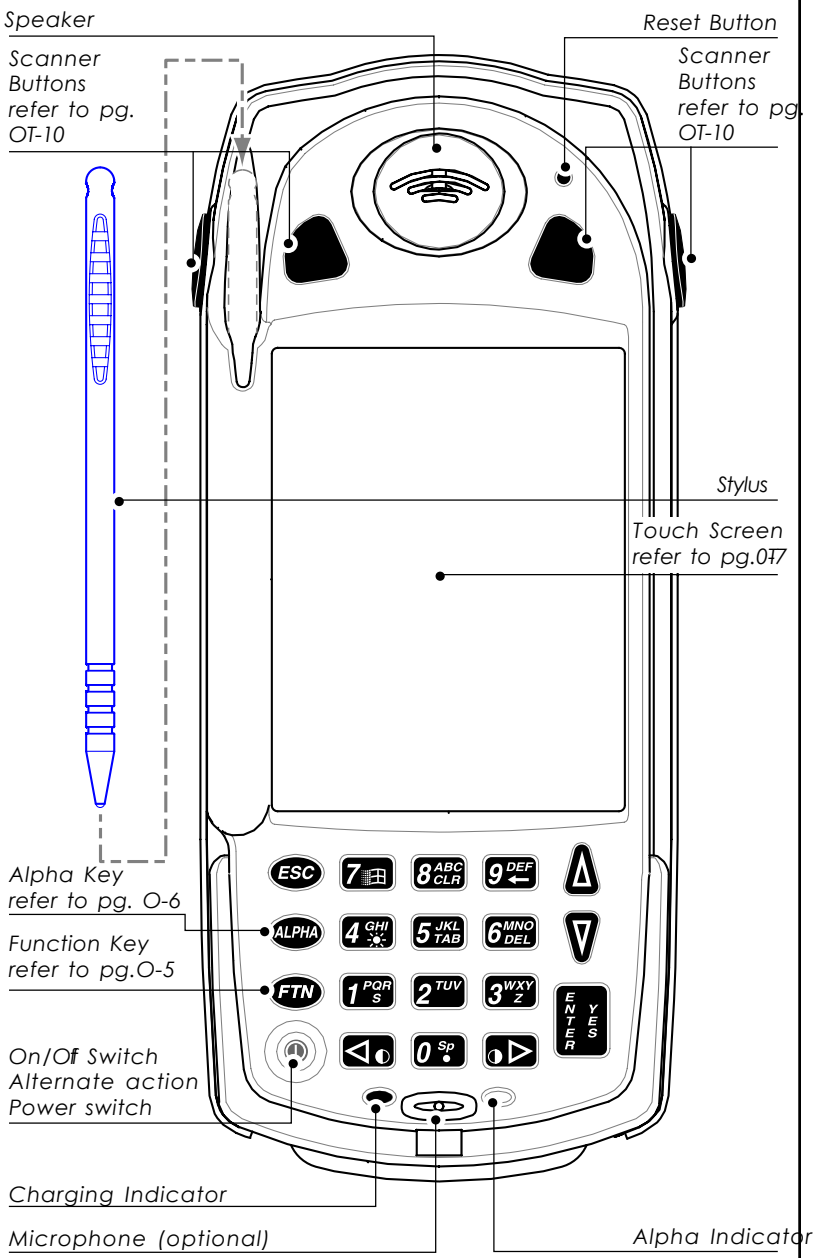
Warning for units equipped with the WLAN radio option:

The following section only applies when the PS2100T terminal has FCC ID: I28PS21224121 on the the serial number label. (This label is on the underside of the terminal.)

⚠ Warning: Use of the PS2100T as a handheld terminal with FCC ID: I28PS21224121 meets the FCC requirements for radio frequency (RF) radiation exposure. To minimize exposure the user should avoid holding the terminal, especially the scanner end, up to his/her head or torso. The terminal with this radio option has been SAR tested. The maximum SAR value measured was 0.18 W/kg averaged over 1 gram.

⚠ Warning: Use of the PS2122 printer with the above PS2100T terminal docked in the cradle meets the FCC requirements for radio frequency (RF) radiation exposure. To minimize exposure the user should avoid leaning over the docked terminal, especially the scanner end. The PS2122 with this terminal/radio option has been SAR tested. The maximum SAR value was 0.17 W/kg averaged over 1 gram.

Controls



PS2100T CONTROLS AND DISPLAY

Display

The display for the PS2100T is an 240 by 320 pixel liquid crystal graphics display with backlighting and four shades of gray. It is equivalent to $^1/_4$ of a standard VGA display. The display is integrated with a touch screen which enables the user to enter data by means of a stylus. Use of the touch screen is detailed later in the Controls Section.

Backlight:

The PS2100T allows the user to enable and disable the LCD backlight by pressing <FTN> ☼ (4). The backlight remains on until the <FTN> ☼ (4) sequence is pressed again. For example, with the backlight off, pressing <FTN> ☼ (4) will turn the backlight on.

There is an additional power drain on the battery with the display backlight enabled. The application in the unit may turn the backlight on or off with no input from the user to extend battery life.

Contrast:

Pressing <FTN> ◐ (<) will cause the contrast to become lighter with each successive keystroke.

Pressing <FTN> ◑ (>) will cause the contrast to become darker with each successive keystroke.

Keyboard Interface

Data entry capabilities with the PS2100T keypad can be expanded by using either the Function <FTN> or Alpha <ALPHA> keys in conjunction with the keypad. The following details the keypad functions of the PS2100T.

Default functions

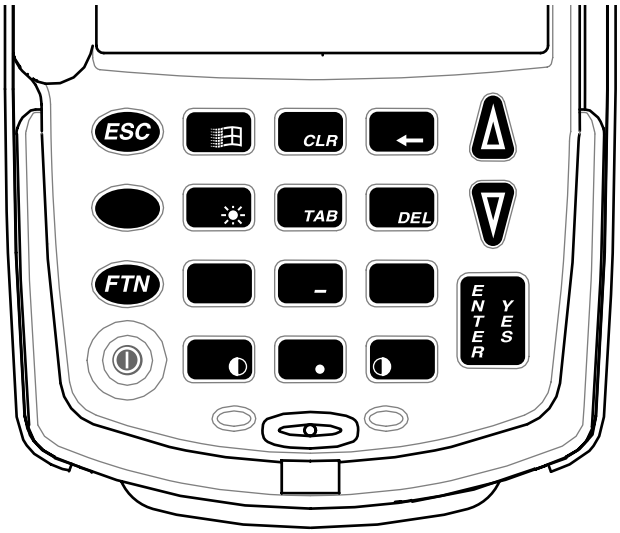
The terminal is set up as a numeric keypad as its default mode of operation. The horizontal and vertical cursor keys allow navigation on the touch screen as on a normal P.C. keyboard and only the numeric functions of the main keys are active.

PS2100T Default Keys

Using the Function Key

The blue colored characters and functions are accessed by pressing <FUNC> followed by the appropriate key.

The accompanying illustration shows keypad functions when the terminal is in the Function mode.



PS2100TF UNCTION KEYS

- Pressing the ⊞ icon will bring up the Windows CE "Start" menu on the touch screen.
- The <CLR> key deletes the current entry.
- The ☼ (backlight) and ◐ ◑ (contrast) keys are described in the section on the display.
- The ← key backs up the cursor a character at a time.
- The <TAB>, <space> <DEL> and <.> keys perform the same function as on a full keyboard.

Using the Alpha Keys

Alpha characters on the keypad are accessed by pressing the <ALPHA> key followed by pressing the key with the desired character the appropriate number of times. For example, the letter "C" is accessed by pressing the <ALPHA> key followed by pressing the 2 ABC CLR key three times. If the next character that is needed is on a different key then pressing that key will advance the cursor ton the next character. If, however, as in the example above we wanted "C" to be followed by "A" we would need to advance the cursor to the next character by using the right cursor key (>) and then press 2 ABC CLR once to enter "A".

PS2100TA LPHA KEYS

Notes:

- The "S" and the "Z" characters are produced by pressing the appropriate character key four times.
- Alpha keys produce only upper case alpha characters.
- The cursor keys stay active in the Alpha mode.
- The Alpha function stays active until the <ALPHA> key is pressed again. An indicator at the bottom of the keypad indicates the terminal is in Alpha mode.

Touch Screen

The touch screen is the primary means of performing most functions and entering data on the PS2100T. The stylus provided with the terminal can be used to “point and click” on menu items in much the same way as a mouse is used on a desktop PC .

Stylus

The PS2100T stylus is especially designed for compatibility with the touch screen. Use of any other pointing device, e.g. a ball point pen or a pencil, will cause degradation and eventual damage to the touch screen.

Always use the stylus provided with the terminal.

Selecting objects

Objects are selected on the touch screen by positioning the point of the stylus over the desired object, and tapping on the screen.

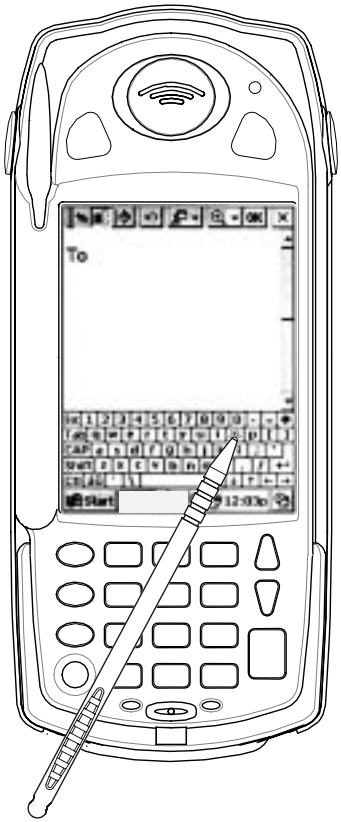
- If you have tapped a button or selection box, the object will become highlighted.
- If a data entry box is selected, pressing the stylus will move the terminal’s cursor to that position, and data can now be entered either via the various touch screen options, or by means of the terminal’s keypad. Refer to the section below on using the On-Screen Keyboard, or the previous section on using the Numeric Keypad.
- Double-tapping an application or document icon will open it.
- Text may be selected by firmly sliding the stylus tip over the desired characters.
- Control sliders, and the elevator boxes on the display can be also moved by sliding the stylus.

Using the On-Screen Keyboard

The PS2100T also allows data entry via its On-Screen Keyboard in addition to using the numeric keypad. The On-Screen Keyboard is accessed by pressing the <FUNC> and <ALPHA> keys at the same time. Applications written for the terminal may also display the On-Screen Keyboard when it is required for input.

Once the On-Screen Keyboard is displayed, data can be entered by tapping on the desired key with the stylus. Characters will be displayed as they are touched.

Numeric keypad functions can also be used in conjunction with the On-Screen keyboard.



USING THE PS2100T ON-SCREEN KEYBOARD

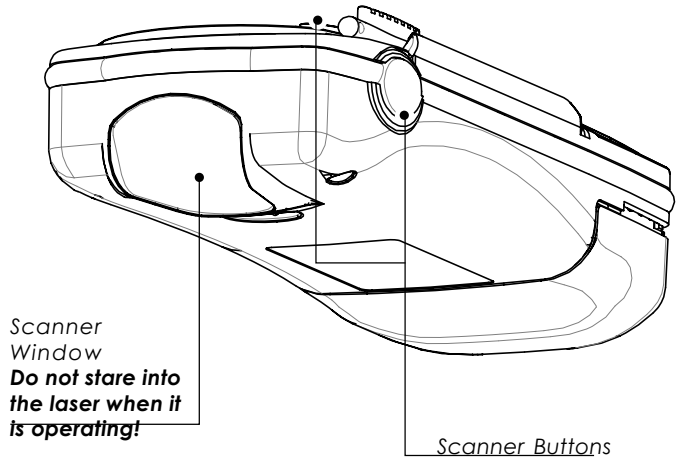
Internal Scanner

Laser Safety Warning

The scanners used on the PS2100T or the PS2100 Series Systems are Class II lasers. They can emit up to a 1 milliwatt beam of light which could cause eye damage if stared at directly. Do not stare into a laser when it is operating!

Actuating the Scanner

The integrated scanner on the PS2100T can be actuated by either the left or right hand sets of buttons. The side mounted buttons allow easy operation of the scanner with the same hand that holds the terminal while the



top mounted buttons allow actuation of the scanner with the hand that uses the stylus or the keypad.

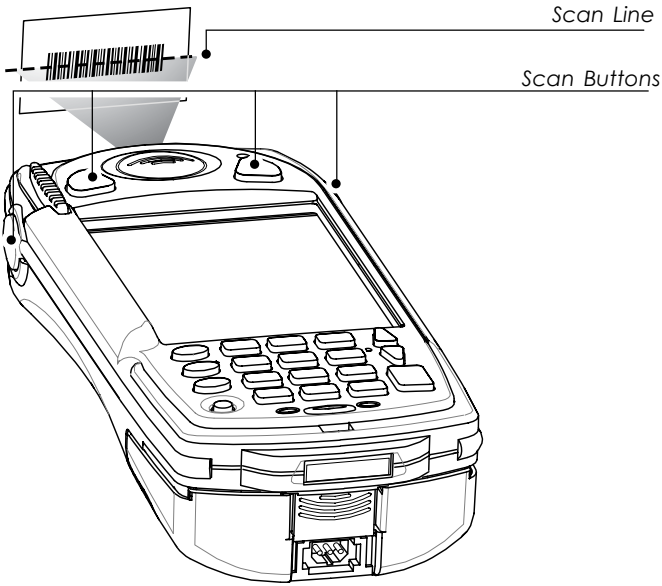
The Scanner can also be used when the terminal is docked in a PS2100 system. The scanner will work as described below, but the object being scanned must be placed in front of the scanner window of the terminal. Refer to the System Section of this manual for more information.

A successful scan is accompanied by a tone from the speaker.

Scanning Bar Codes

The scanner component of the PS2100T can read and decode information stored as bar codes, thus making data entry more efficient. Use this procedure to scan bar codes:

- Point the PS2100T at the label to be scanned. The optimum range of the scanner is approximately 2.5-14" [6.4-35.5 cm]
- Press and hold the one of the scanner buttons to start scanning.
- A line of light will appear on the surface you are scanning. Position the line perpendicular to the lines of the barcode being scanned and ensure it crosses the entire bar code.
- When the PS2100T successfully reads and decodes the bar code, the unit will beep, indicating that the bar code data has been entered into the terminal memory.



Scanning Barcodes with the PS2100T

Battery Power

Power Conservation

Maximizing battery life insures the longest operating time between charging or battery replacement cycles. Follow these guidelines to optimize battery life:

- Turn the terminal off when it will not be used for awhile by pressing the green ⏻ key. This suspends terminal operation and allows it conserve power. Pressing the ⏻ switch again restores the PS2100T to its state prior to suspending operation. You do not have to wait for the terminal to restart. The terminal will automatically suspend operation after a pre-set interval.
- Turn off the display backlight with the <FTN> ☼ (4) key combination when it is not needed. The terminal will automatically dim the backlight after a pre-set period of inactivity if that function is enabled in the terminal's application.
- If the terminal is docked in a PS2100 Series Printing System connect the unit to A.C. power whenever possible using the system's charging system. Batteries will charge while the system is being used.

Charging the Battery

The PS2100T will alert the user when the battery needs charging. The user then has the option of either replacing the battery with a freshly charged one, or charging the unit. If the battery is run down below a minimum limit, the terminal will suspend operations and cannot be restarted until the battery is either replaced or recharged.

There are two options for charging the PS2100T:

- **PS2100 Printing System.** If the terminal is docked in a PS2100 Printing System, the entire system can be plugged into an A.C. power source and it will

continue to operate normally while its battery is recharged. Refer to the System Section of this manual for more information on charging batteries in the PS2100 Printing System.

• **The LI72 Wall Charger** (p/n AT15759-tab)

The LI72 is a wall mounted single charger with universal 110 to 230, 50-60 Hz. VAC input. The charger can be configured with plugs which comply with most international standards. The LI72 Charger can only be used when the terminal is not docked in a PS2100 Series system.

Plug the LI72 Charger into the appropriate A.C. power source, and the charger plug into the PS2100T Battery Pack. The LED on the charger will report charging status. A steady light indicates that the battery is being charged ("fast mode"). A slowly blinking light indicates that the charge cycle is complete and the charger is now in "trickle charge" mode. A rapidly blinking light indicates a charging problem and the battery undergoing a charge may be defective.

PS2100T batteries can be charged while the terminal is in use. Charging the battery with the Wall Charger will take approximately 4 hours. Actual charging time will depend on the battery pack's condition and usage of the terminal while charging.

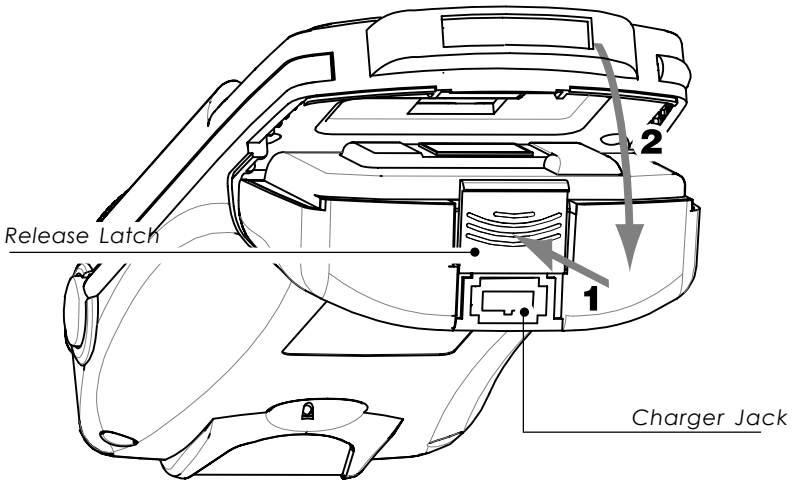
Charger part numbers will vary depending on specific country of use. Consult Zebra for the correct part number for your application.

Changing Terminal Batteries

Terminals must be removed from the PS2100 Printing System to replace their batteries. Refer to the System section for instructions on removing and replacing docking terminals.

⚠ Always turn the terminal off before changing batteries!

⚠ The PS2100T will retain data and its current settings for a maximum of five minutes when its battery is removed. Before changing batteries, insure that you have a fully charged replacement battery on hand, and install the new battery as quickly as possible.

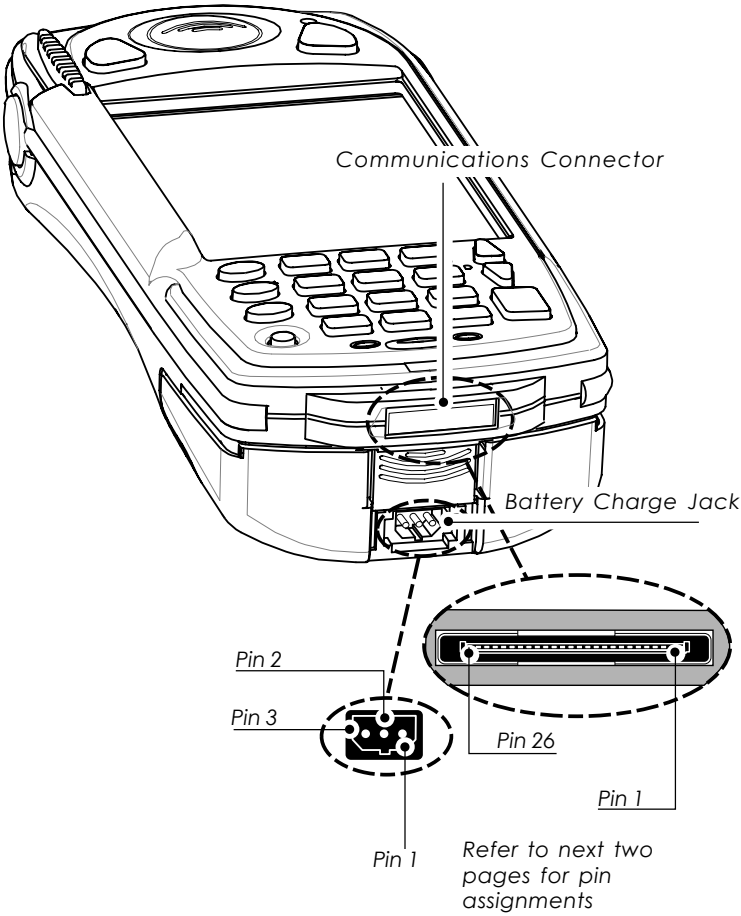


CHANGING BATTERIES IN THE PS2100T

The PS2100T's battery is removed by pressing on the release latch as shown at "1" in the figure below, and pivoting the battery away from the terminal as shown at "2".

Follow the reverse procedure to install a new battery: Insert the alignment tabs on the battery into the PS2100T and then pivot the battery into the terminal until the latch clicks into place, retaining the battery.

I/O Connections



PS2100T I/O C ONNECTIONS

These connections are not accessible when the PS2100T is docked in a PS2100 Printing System.

Communications Connector

The following are the pin assignments for the 26-pin communications/power connector.

Pin Number	Signal Name	Signal Type	Description
1	AUX_SELB#	input	Docking signal- short to pin 26 when docked
2	+AUX	input	Aux Power input
3	+AUX	voltage	6.9-9.0 VDC/1.25AFused 3A./ 10V TVS
4	+AUX	voltage	Not Fused/10V TVS
5	DCD1	input	COM1 (DTE)
6	DSR1	input	COM1 (DTE)
7	RXD1	input	COM1 (DTE)
8	RTN		Power Supply Return
9	TXD1	output	COM1 (DTE)
10	RTN		Power Supply Return
11	RTS1	output	COM1 (DTE)
12	CTS1	input	COM1 (DTE)
13	DTR1	output	COM1 (DTE)
14	PWR_CTL	output	Printer Power Enable (Open Collector 10V TVS)
15	RTN		Power Supply Return
16	RTN		Power Supply Return
17	RXD2	input	COM2 (DTE)
18	CHG_STATUS#	input	Battery Charging Status LED
19	TXD2	output	COM2 (DTE)
20	RTN		Power Supply Return
21	RTS2	output	COM2 (DTE)
22	CTS2	input	COM2 (DTE)
23	+CHG	input	Charger input
24	+CHG	voltage	9.0VDC max/2.225A. max.
25	+CHG	input	Charger input
26	AUX_SELA#	input	Docking signal- short to pin 1 when docked

Battery

The PS2100T utilizes a removable 7.2 VDC LiION battery pack with an integral charger jack. If not in use, the terminal will automatically power off to conserve battery life. The inactivity time-out value can be programmed; the default time-out is one minute. Other power features:

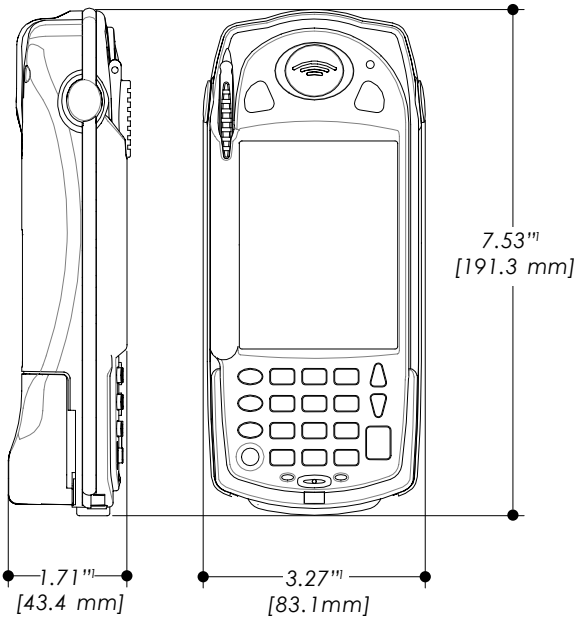
- Full charge lasts approximately_ when terminal is not docked.
- Low battery indicated by audible beeps and low battery message on display
- Battery includes overcharge protection circuitry.

Charger Jack

Pin Number	Signal Name	Description
1	+V	Charge voltage
2	PWR	Provides power when docked in a PS2100 Printing System
3	-V	Ground

Terminal Specifications

Size/Weight



Weight: 1 lb. (with Battery)[1]

Display/ Touch Screen

- 240 x 320 pixels (1/4 VGA), transflective backlit, FSTN liquid crystal display (LCD)
- Three shades of gray plus white
- Integrated resistive non-glare touch screen

Keypad

- 19 Key alphanumeric elastomer

Interfaces

- Two RS-232 ports for one-way or two-way communication to terminal or printer at up to 115K BPS.

Optional Radio Systems

- Short Range (SRRF) System: 916MHz or 2.4 GHz Compatible with SRRF equipped Zebra printers.
- Long Range System: per 802.11b, supports qualified radio cards via internal PCMCIA port. Allows integration with facility-wide LANs.[2]

Optional Built-in Scanner

- Visible laser diode
- Scan rate = 36 +/- 3 scans per second
- CDRH Class II
- Range (10 mil) = 2.5-14 inches

Memory

- Flash Memory: 4MB std. 8MB optional
- DRAM Standard configuration: 16MB

Operating System

- Microsoft Windows CE® v3.00 or higher

Environmental Characteristics

- Operating temperature: 32˚ to 122˚F (0˚ to 50˚C)
- Storage temperature: 5˚ to 150˚F (-15˚ to 65˚C)
- Relative humidity: 45%-95% non-condensing
- Water Resistance: NEMA3R for water and dust resistance[1]
- Drop Test: Three (3) consecutive 4' (1.2 m) drops to concrete.[1]

Additional Features

- 80 MHz processor speed
- Integrated real time clock and date
- Special touch screen stylus included
- Dockable with PS2100 Series Printing Systems

1. Specs do not apply to unit docked in a PS2100 series system.
2. Refer to warnings regarding RF frequency radiation in the Introduction of this section.

Printer Section

Printer Installation and Operation

This section provides information on the operation and maintenance of the PS2100 series printers.

Printers used in PS2100 series system print on 2" wide media, and use direct thermal media. They are specifically designed for printing labels, tags or continuous receipts (with or without bar codes) with the PS2100T terminal.

Warnings

SHOCK HAZARD WARNING:
The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.

MEDIA WARNING:
Always use high quality approved labels, tags and transfer ribbons. If adhesive backed labels are used that DO NOT lay flat on the backing liner, the exposed edges may stick to the label guides and rollers inside the printer, causing the label to peel off from the liner and jam the printer. Approved supplies can be ordered from your dealer.

RELOADING HINT:
If you should run out of labels while printing, DO NOT turn the printer OFF while reloading or data loss may result. The printer will automatically resume printning when a new label roll is loaded.

STATIC DISCHARGE:
The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device. DO NOT TOUCH the print head or the electronic components under the top cover.

THERMAL PRINTING:
The print head becomes hot while printing. To protect from damaging the print head and risk of personal injury, avoid touching the print head. Use only the cleaning pen to perform maintenance.

Thermal Printers Compliance

EC Compliance

European Council	Directive	Compliance to Standards	
89/336/EEC	EMC Directive	EN 55022-B 1995	RF Emissions control
92/31/EE		EN 50082-1 1997	Immunity to Electro-magnetic Disturbances
		IEC 1000-3-2	Harmonic Emmissions
		IEC 1000-3-3	Voltage Variation
	CB Schema	EN 60950	Safety

FCC - Declaration of Conformity:

Model: LP _ conforms to the following specification:

FCC Part 15, Subpart B, Section 15.107(a)
and Section 15.109(a) Class B digital device

Supplemental Information:

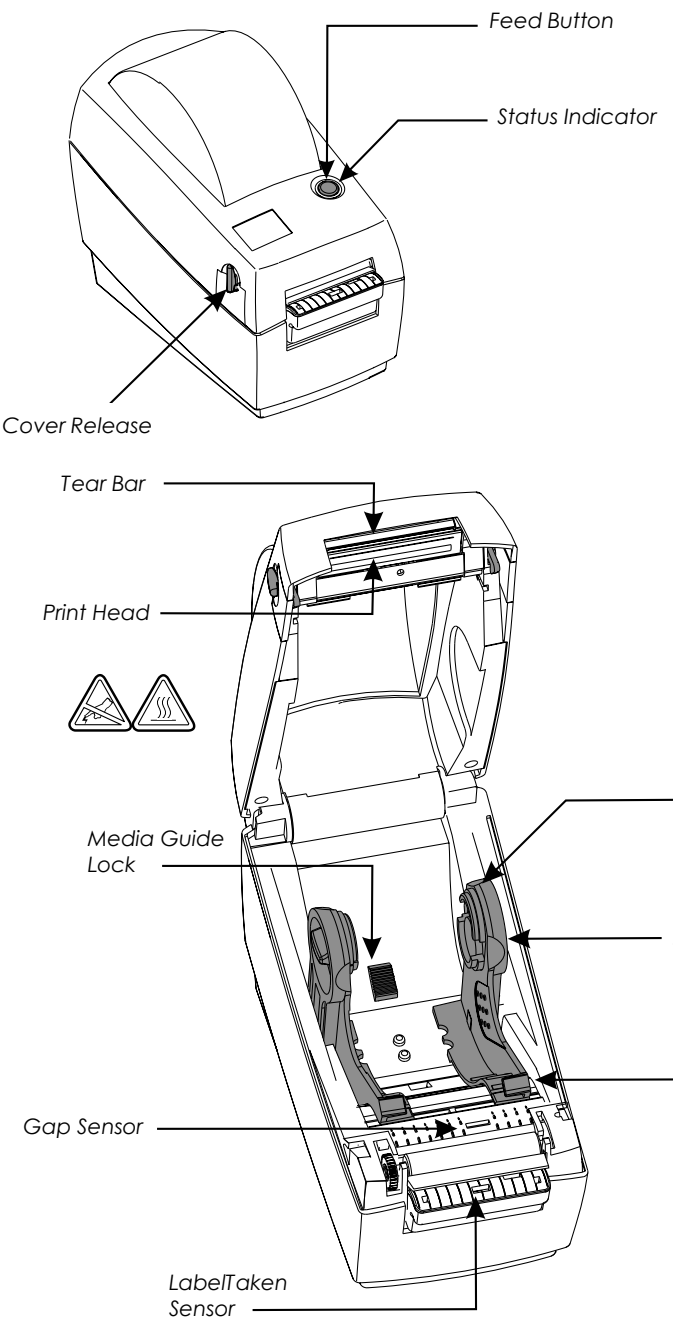
This device complies with Part 15 of the FCC Rules. Operation is subject to the following Two Conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Notice:

This device complies with Industry Canada ICS-003 class B requirements.

Cet equipement est conforme a l'ICS-003 classe B de la norm Industrielle Canadian

Introduction to Printer

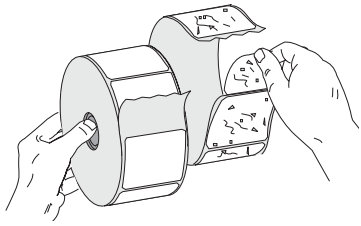


Loading Media

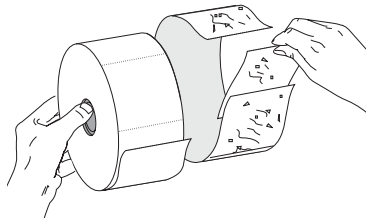
Preparing Media Before Loading

During shipment, the outside length of media may become dirty when handled or dusty when stored. Preparing media before loading it into the printer makes sure both the print head and platen stay cleaner for a longer time.

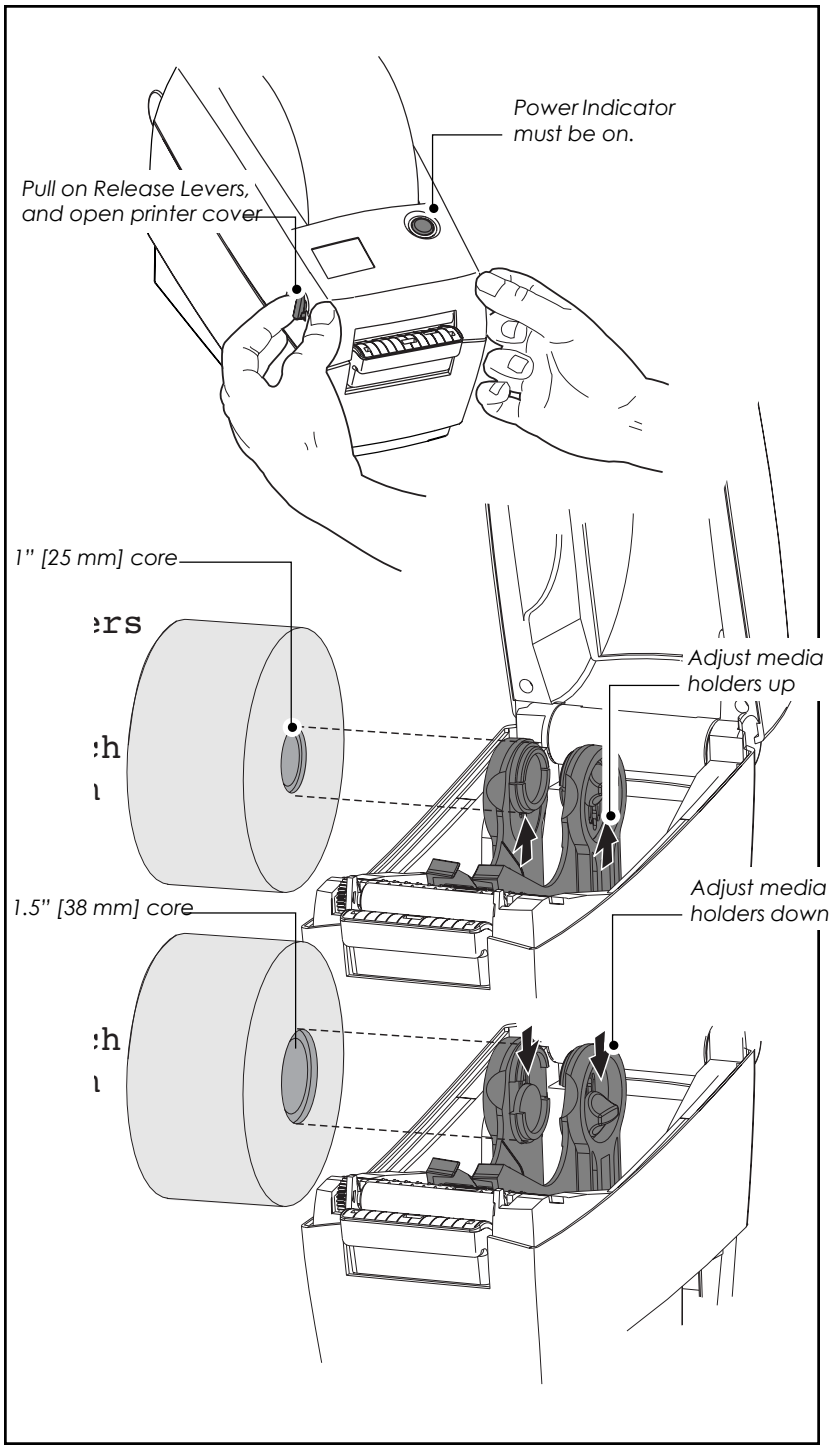
Label Rolls
Find the tape and pull off both labels held by the tape



Tag Stock Rolls
Find the tape and detach the bottom tag



You must avoid dragging adhesive or dirty media between the print head and platen. Such an occurrence damages the print head and is not covered under your warranty.


Power Indicator
must be on.
Pull on Release Levers,
and open printer cover
1" [25 mm] core
Adjust media
holders up
1.5" [38 mm] core
Adjust media
holders down

Loading Media

Turn the power "On"

Press the "On/Off" button on the terminal. The indicator surrounding the printer's feed button should light up.

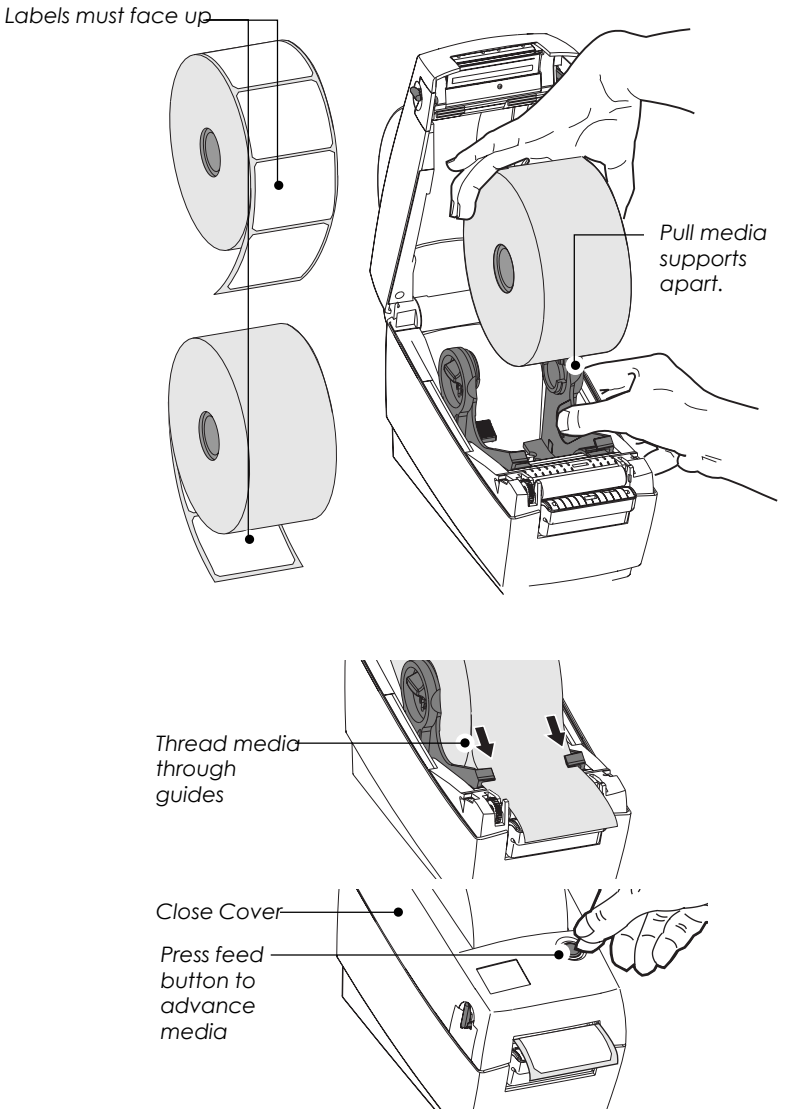
Open the Printer Cover

Pull on the Cover Release levers as shown, and rotate the cover up.

Adjust the Core Size Selectors

- If the roll of media has a small (1" [25 mm]) core, push the selectors up as shown.
- If the roll of media has a large (1.5" [38 mm]) core, push the selectors down as shown.

continued on next page


Labels must face up
Pull media supports apart.
Thread media through guides
Close Cover
Press feed button to advance media

Install the Roll

- Spread the Roll Holders apart, and place the core of the media on the supports.

Note that media can spool off the roll with labels on the outside or from the inside of the roll.

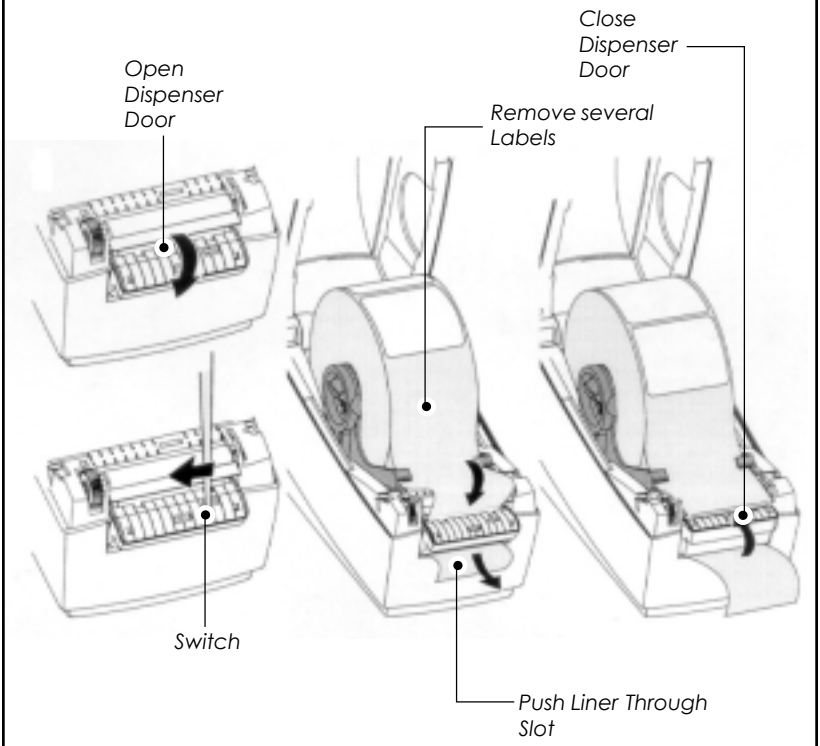
- Allow the Roll holders to spring back and support the media roll.

Thread Media Through the Guides

Note that the side to be printed must face up as it emerges from the printer.

Close the Cover

- Close the printer's cover, insuring it is latched securely.
- Press the Feed Button. The printer will advance a length of media and stop. The indicator around the feed button should be lit. If it is still dark, refer to the Troubleshooting section.


Close
Dispenser
Door
Open
Dispenser
Door
Remove several
Labels
Switch
Push Liner Through
Slot

Label Dispenser Option

Printers can be equipped with a label dispenser which when utilized will print a label and automatically separate it from its backing and present ti for the user to apply. A 'label taken" sensor will prevent printing any further labels until the one presented is removed.

The Dispenser works as detailed below:

Set the Label Taken Sensor

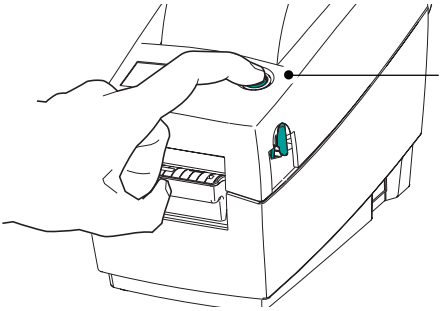
- Pull open the label dispenser door.
- Use a stylus to set the Label Taken Sensor to the "1" position.

Load Media

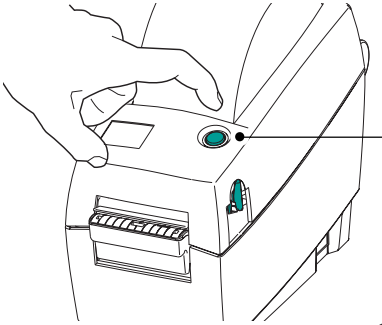
- Remove several labels from the roll of media.
- Slide the backing through the slot under the dispenser door as shown.

Close Door

Close the label dispenser door as shown. The printer is new ready to print, separate and dispense labels.



Turn printer off, press and hold the Feed Button



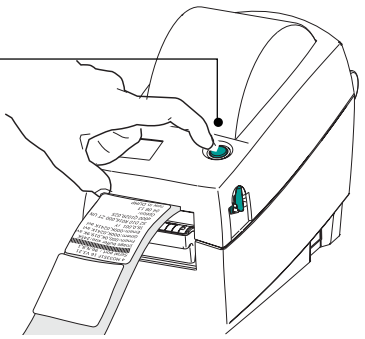
Turn printer back on and when indicator flashes, release the Feed Button

Summary Status report is printed

```
4 MO3351F 16 V3.21
Serial port : 96,N,8,1
Image buffer size:245K
Fmem:000,0K,019.9K avl
Gmem:000K,0241K avl
Emem:000K,0241K avl
I8,0,001  rY
S2 D8 R016,000 ZT UN
q800 Q1029,025
Option:
04 08 13
now in DUMP
```

Press feed Button to resume normal operation.

Note: the printer will print "out of DUMP"



AutoSense Gap Sensor Adjustment

This procedure is also known as a “two-key reset”. It forces the printer to print out a summary of its current status and places the printer into a diagnostic mode. In this mode it will only print the raw code sent to it by the PS2100 terminal, and will not create any labels.

If you have turned on the Label Taken Sensor, you must turn it off prior to performing this step.

- Turn the printer off by pressing the “ON/Off” key on the PS2100 terminal.
- Press and hold down the Feed Button on the printer under test.
- Turn the printer back on by pressing the “ON/Off” key on the PS2100 terminal again.
- When the indicator around the Feed Button flashes, release the Feed Button.
  The printer will advance media and then print out a status report as shown. It is now in its diagnostic “DUMP” mode.
- Tap the feed button again. The printer will print “out of DUMP” and can resume normal operation. Remember to turn the Label Take Sensor switch back to “1” if you are using this feature.

Cleaning the Print Head

The print head can be cleaned whenever a new media roll is loaded.

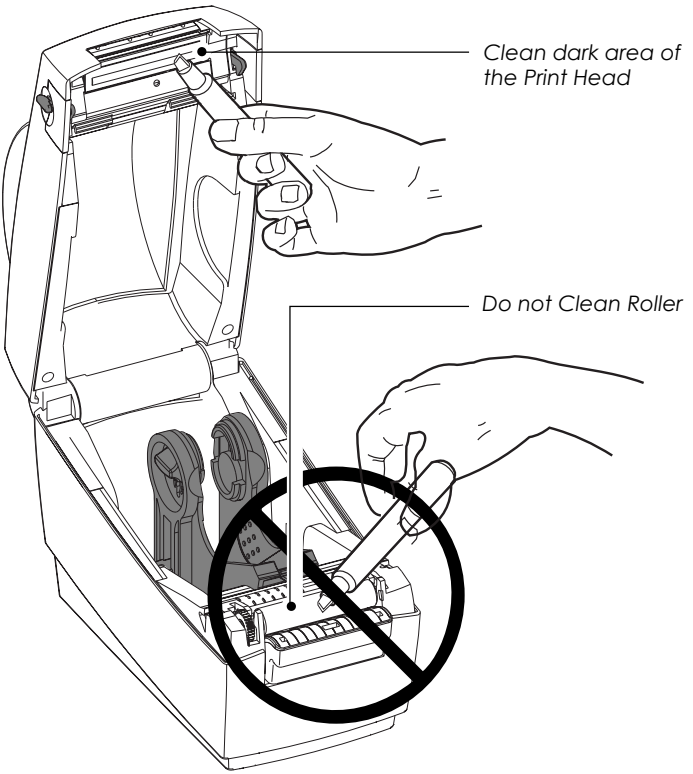
- Open the cover.
- Rub the cleaning pen across the dark area of the print head. If a cleaning pen is not available a cotton swab saturated in isopropyl alcohol can be substituted.

⚠ ***Never use any sharp objects, such as paper clips or screwdrivers to clean the printhead.***

If the printer has been running for a long time, the printhead may be hot.

Do not clean the roller.

- Wait one minute to allow the Print Head to dry before closing the cover.



Printer Troubleshooting

Status Indicator

Does not light when power is turned to ON .

- Check power connection from system to printer.

Lights GREEN, but printer will not print.

- Check interface cable connections from system to printer.
- Make sure top cover is locked closed.

Blinks GREEN-RED-RED.

- Operator has paused the printer during a batch job. Tap the FEED button to continue.

Lights AMBER.

- Printer has encountered a syntax or command error.

Blinks RED

- The optional cover open sensor is active. Press top cover to close and lock.

Lights RED

- Media is out. Reload a new source of media so printer can continue printing.
- Power-up failure.

Blinks GREEN-AMBER.

- AutoSense in process. Wait until printer dispenses a status report.

Lights AMBER-RED.

- Download in process.

Operation

Printer appears to be working (media is being fed out), but nothing is printed.

- Verify that the labels are the correct type (direct thermal).
- Check that the roll is loaded properly: with the direct thermal side facing up.
- Clean the print head with cleaning pen.
- Ensure top cover is locked closed.
- Check interface cable connections from system to printer.

continued on next page

Printing is faded or poor quality

- Clean the print head with cleaning pen.
- Adjust print speed/darkness in software.
- Check that the roll is loaded properly: with the direct thermal side facing up.

Prints only partial label or skips a label.

- Label caught on print head.
- Print head is not properly latched.

Printing stops and status indicator lights ORANGE or RED.

- Possible problem with label stock. Use only approved labels and tags.
- Possible label jam.

Optional Label Dispenser Operation

Printing continues between labels.

- Make sure label-taken sensor is on.
- The label-taken sensor is blocked or dirty. Remove any scraps or dust.

Prints one label and stops.

- Verify the quantity has been correctly set.

Patent Information

This product and/or its use may be covered by one or more of the following US patents and corresponding international patents worldwide

D275,286	5,029,183	5,364,133	5,543,610	6,034,708
D347,021	5,047,617	5,367,151	5,545,889	6,036,383
D389,178	5,103,461	5,372,439	5,552,592	6,057,870
D430,199	5,113,445	5,373,148	5,570,123	6,068,415
D433,702	5,140,144	5,378,882	5,578,810	6,070,805
3,964,673	5,132,709	5,396,053	5,589,680	6,095,704
4,019,676	5,142,550	5,396,055	5,612,531	6,109,801
4,044,946	5,149,950	5,399,846	5,642,666	6,123,471
4,360,798	5,157,687	5,408,081	5,657,066	6,147,767
4,369,361	5,168,148	5,410,139	5,768,991	6,151,037
4,387,297	5,168,149	5,410,140	5,790,162	6,201,255 B1
4,460,120	5,180,904	5,412,198	5,791,796	6,231,253 B1
4,496,831	5,229,591	5,415,482	5,806,993	6,261,009
4,593,186	5,230,088	5,418,812	5,813,343	6,261,013
4,607,156	5,235,167	5,420,411	5,816,718	6,267,521
4,673,805	5,243,655	5,436,440	5,820,279	6,270,072 B1
4,736,095	5,247,162	5,444,231	5,848,848	6,285,845 B1
4,758,717	5,250,791	5,449,891	5,860,753	6,292,595
4,816,660	5,250,792	5,449,893	5,872,585	6,296,032
4,845,350	5,262,627	5,468,949	5,874,980	6,364,550
4,896,026	5,267,800	5,479,000	5,909,233	6,379,058 B1
4,897,532	5,280,163	5,479,002	5,976,720	6,409,401 B1
4,923,281	5,280,164	5,479,441	5,978,004	6,411,397 B1
4,933,538	5,280,498	5,486,057	5,995,128	6,428,227 B2
4,992,717	5,304,786	5,503,483	5,997,193	
5,015,833	5,304,788	5,504,322	6,004,053	
5,017,765	5,321,246	5,528,621	6,010,257	
5,021,641	5,335,170	5,532,469	6,020,906	

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